

**Supplementary Table 1. YFV-Specific T cell Epitopes<sup>a</sup>**

<b>Protein</b>	<b>Range</b>	<b>HLA-DRB1</b>	<b>Amino acid sequence</b>	<b>Positive Subjects</b>
<b>Cap</b>	<b>49-65</b>	<b>01:01</b>	<b>FFFLFNILTGKKIT AHL</b>	<b>5 of 5<sup>b</sup></b>
Cap	67-83	01:01	RLWKMLDPRQGLAVLRK	4 of 5
Cap	79-95	07:01	AVLRKVKRVVASLMRGL	3 of 6
Cap	25-41	11:01	NKIKQKTKQIGNRPGPS	3 of 6
<b>Cap</b>	<b>73-89</b>	<b>11:01</b>	<b>DPRQGLAVLRKV KRVVA</b>	<b>4 of 6<sup>b</sup></b>
Cap	85-102	11:01	KRVVASLMRGLSSRKRR	3 of 6
<b>PrM</b>	<b>121-137</b>	<b>01:01</b>	<b>IERWFVRNPF FAVTALT</b>	<b>5 of 5</b>
PrM	133-149	01:01	VTALTIAYLVGSNMTQR	3 of 5
PrM	61-77	04:01	IDCWCYGVENVRVAYGK	2 of 3
PrM	61-77	07:01	IDCWCYGVENVRVAYGK	2 of 6
Env	115-131	01:01	ACAKFTCAKSMSLFEVD	2 of 5
Env	157-173	01:01	KTLKFDALSGSQEVEFI	3 of 5
Env	271-287	01:01	NNLYKLHGGHVSCRVKL	3 of 5
Env	331-347	01:01	RIPVIVADDLTAAINKG	3 of 5
<b>Env</b>	<b>43-59</b>	<b>03:01</b>	<b>ISLETVAIDRPAEVRKV</b>	<b>10 of 10<sup>b</sup></b>
<b>Env</b>	<b>331-347</b>	<b>03:01</b>	<b>RIPVIVADDLTAAINKG</b>	<b>9 of 10<sup>b</sup></b>
<b>Env</b>	<b>43-59</b>	<b>04:01</b>	<b>ISLETVAIDRPAEVRKV</b>	<b>3 of 3</b>
<b>Env</b>	<b>121-137</b>	<b>04:01</b>	<b>CAKSMSLFEVDQTKIQY</b>	<b>3 of 3<sup>b</sup></b>
<b>Env</b>	<b>199-215</b>	<b>04:01</b>	<b>ETESWIVDRQWAQDLTL</b>	<b>3 of 3</b>
Env	241-257	04:01	TIRVLALGNQEGSLKTA	2 of 3
<b>Env</b>	<b>301-317</b>	<b>04:01</b>	<b>TDKMFFVKNPDTGHGT</b>	<b>3 of 3</b>
Env	331-347	04:01	RIPVIVADDLTAAINKG	2 of 3
Env	343-359	04:01	AINKGILVTVNPIASTN	3 of 3
<b>Env</b>	<b>385-401</b>	<b>04:01</b>	<b>LTYQWHKEGSSIGKLFT</b>	<b>3 of 3</b>
<b>Env</b>	<b>241-257</b>	<b>04:04</b>	<b>TIRVLALGNQEGSLKTA</b>	<b>3 of 3</b>
<b>Env</b>	<b>313-329</b>	<b>04:04</b>	<b>TGHGTVVMQVKVSKGAP</b>	<b>3 of 3<sup>b</sup></b>
Env	343-359	04:04	AINKGILVTVNPIASTN	2 of 3
<b>Env</b>	<b>415-431</b>	<b>07:01</b>	<b>DTAWDFSSAGGF FTSVG</b>	<b>4 of 6<sup>b</sup></b>
Env	109-125	11:01	GKGSIVACAKFTCAKSM	5 of 6
Env	127-143	11:01	LFEVDQTKIQYVIRAQL	3 of 6
Env	223-239	11:01	GVWREMHHLVEFEPHA	4 of 6
Env	283-299	11:01	CRVKLSALT LKGTSYKI	2 of 6
<b>Env</b>	<b>373-389</b>	<b>11:01</b>	<b>DSYIIVGRGDSRLTYQW</b>	<b>6 of 6<sup>b</sup></b>
Env	421-437	11:01	SSAGGF FTSVGKGIHTV	4 of 6
<b>Env</b>	<b>457-473</b>	<b>15:01</b>	<b>MGAVLIWVGINTRNMTM</b>	<b>5 of 5<sup>b</sup></b>
NS1	31-47	01:01	KYSYYPEDPVK LASIVK	4 of 5
NS1	151-167	01:01	NSFQIEEFGTGVFTTRV	3 of 5
NS1	7-23	03:01	NFGKRELKCGDGIFIFR	4 of 10

<b>NS1</b>	<b>85-101</b>	<b>03:01</b>	<b>DISVVVQDPKNVYQRGT</b>	<b>10 of 10<sup>b</sup></b>
NS1	127-143	03:01	GRKNGSFIIDGKSRKEC	9 of 10
NS1	163-179	03:01	FTTRVYMDAVFEYTIDC	6 of 10
NS1	175-191	04:01	YTIDCDGSILGAAVNGK	3 of 3
NS1	55-71	04:04	CGLNSVDSLEHEMWRSR	3 of 3
NS1	61-77	07:01	DSLEHEMWRSRADEINA	6 of 6
<b>NS1</b>	<b>109-125</b>	<b>07:01</b>	<b>DGLQYGWKTWGKNLVFS</b>	<b>6 of 6</b>
NS1	223-239	07:01	ECEWPLTHTIGTSVEES	2 of 6
NS2a	67-83	01:01	NGGDAMYMALIAAFSIR	3 of 5
<b>NS2a</b>	<b>115-131</b>	<b>01:01</b>	<b>LGGVMGGLWKYLNAVSL</b>	<b>5 of 5<sup>b</sup></b>
NS2a	13-29	03:01	MMIAMEVVLRRKRQGPQ	5 of 10
NS2a	145-161	04:04	SNTILPLMALLTPVTMA	2 of 3
NS2a	49-65	07:01	LDLLKLTVAVGLHFHEM	5 of 6
NS2a	67-83	07:01	NGGDAMYMALIAAFSIR	2 of 6
NS2a	115-131	07:01	LGGVMGGLWKYLNAVSL	4 of 6
NS2a	13-29	11:01	MMIAMEVVLRRKRQGPQ	4 of 6
NS2b	79-95	01:01	SEQGEFKLLSEEKVPWD	2 of 5
NS2b	19-35	15:01	GLAFQEMENFLGPIAVG	5 of 5
<b>NS3</b>	<b>49-65</b>	<b>01:01</b>	<b>HTMWHVTRGAFVLRNGK</b>	<b>5 of 5<sup>b</sup></b>
NS3	91-107	01:01	WDGEEEVQLIAAVPGKN	3 of 5
NS3	145-161	01:01	RNGEVIGLYGNGILVGD	2 of 5
<b>NS3</b>	<b>265-281</b>	<b>01:01</b>	<b>MCHATLTYRMLEPTRVV</b>	<b>5 of 5</b>
<b>NS3</b>	<b>409-425</b>	<b>01:01</b>	<b>FILATDIAEMGANLCVE</b>	<b>5 of 5</b>
NS3	151-167	03:01	GLYNGILVGDNSFVSA	5 of 10
NS3	229-245	03:01	TRVVLSEMKEAFHGLDV	7 of 10
NS3	283-299	03:01	WEVIIMDEAHFLDPASI	8 of 10
<b>NS3</b>	<b>355-371</b>	<b>03:01</b>	<b>WILADKRPTAWFLPSIR</b>	<b>9 of 10<sup>b</sup></b>
NS3	151-167	04:01	GLYNGILVGDNSFVSA	3 of 3
NS3	367-383	04:01	LPSIRAANVMAASLRKA	2 of 3
<b>NS3</b>	<b>475-491</b>	<b>04:01</b>	<b>SYYYSEPTSENNAHHVC</b>	<b>3 of 3<sup>b</sup></b>
NS3	1-17	04:04	SGDVLWDIPTPKIIEEC	2 of 3
NS3	91-107	04:04	WDGEEEVQLIAAVPGKN	2 of 3
NS3	367-383	04:04	LPSIRAANVMAASLRKA	3 of 3
NS3	409-425	04:04	FILATDIAEMGANLCVE	3 of 3
NS3	19-35	07:01	HLEDGIYGIFQSTFLGA	3 of 6
<b>NS3</b>	<b>49-65</b>	<b>07:01</b>	<b>HTMWHVTRGAFVLRNGK</b>	<b>5 of 6</b>
NS3	349-365	11:01	WNTGHDWILADKRPTAW	4 of 6
NS3	361-377	11:01	RPTAWFLPSIRAANVMA	5 of 6
<b>NS3</b>	<b>145-161</b>	<b>15:01</b>	<b>RNGEVIGLYGNGILVGD</b>	<b>5 of 5<sup>b</sup></b>
NS4a	67-83	01:01	MVIFFMSPKGISRMSMA	2 of 5
NS4a	67-83	11:01	MVIFFMSPKGISRMSMA	4 of 6

NS4b	121-137	01:01	SLILPGIKAQQSKLAQR	4 of 5
NS4b	187-203	01:01	CRTPFSLAEGIVLASAA	3 of 5
NS4b	37-53	04:01	GAAWTVYVGIVTMLS PM	2 of 3
NS4b	67-83	04:01	LSGIAQSASVLSFMDKG	3 of 3
NS4b	67-83	04:04	LSGIAQSASVLSFMDKG	2 of 3
NS4b	97-113	07:01	LVSGWNSITVMPLLCGI	2 of 6
NS4b	234-250	11:01	AFVGVMYNLWKMKTGRR	4 of 6
NS5	67-83	01:01	ERGYVKLEGRVIDLGCG	4 of 5
NS5	127-143	01:01	KDKTDIHRLEPVKCDTL	4 of 5
NS5	469-485	01:01	AKGSRAIWYMWLGARYL	4 of 5
<b>NS5</b>	<b>637-653</b>	<b>01:01</b>	<b>QDCDESVLTRLEAWLTE</b>	<b>4 of 5</b>
NS5	7-23	04:01	TLGEVWKRELNLLDKRQ	3 of 3
NS5	397-413	04:01	KEEFI AKVRSHAAIGAY	2 of 3
NS5	529-545	04:01	GGFYADDTAGWDTRITE	2 of 3
NS5	757-773	04:01	CLSKAYANMWSLMYFHK	2 of 3
NS5	865-881	04:01	SHIHLVIHRIRTLIGQE	2 of 3
<b>NS5</b>	<b>667-683</b>	<b>04:04</b>	<b>DDCVVRPIDDRFGLALS</b>	<b>2 of 3<sup>b</sup></b>
<b>NS5</b>	<b>865-881</b>	<b>04:04</b>	<b>SHIHLVIHRIRTLIGQE</b>	<b>3 of 3</b>
NS5	25-41	07:01	ELYKRTDIVEVDRDTAR	3 of 6
NS5	337-353	07:01	EEVTRMAMTDTPFGQQ	2 of 6
<b>NS5</b>	<b>481-497</b>	<b>07:01</b>	<b>GARYLEFEALGFLNEDH</b>	<b>3 of 6</b>
<b>NS5</b>	<b>619-635</b>	<b>07:01</b>	<b>VQLIRMAEAEMVIHHQH</b>	<b>3 of 6<sup>b</sup></b>
<b>NS5</b>	<b>187-203</b>	<b>11:01</b>	<b>YMPDVLEKLELLQRRFG</b>	<b>5 of 6<sup>b</sup></b>
<b>NS5</b>	<b>235-251</b>	<b>11:01</b>	<b>QTSRLLMRRMRRPTGKV</b>	<b>5 of 6<sup>b</sup></b>
NS5	379-395	11:01	NRWLFRLHAREKNPRLC	2 of 6
NS5	397-413	11:01	KEEFI AKVRSHAAIGAY	4 of 6
NS5	445-461	11:01	QGRCTCVYNMMGKREK	4 of 6
NS5	457-473	11:01	GKREKKLSEFGKAKGSR	2 of 6
NS5	511-527	11:01	IGLQYLG YVIRDLAAMD	4 of 6
NS5	589-605	11:01	KAYMDVISRRDQRGSGQ	4 of 6
NS5	325-341	15:01	VIKILTYPWDRIEEVTR	4 of 5
<b>NS5</b>	<b>367-383</b>	<b>15:01</b>	<b>PPAGTRKIMKV VNRWLF</b>	<b>4 of 5<sup>b</sup></b>
<b>NS5</b>	<b>547-563</b>	<b>15:01</b>	<b>DLDDQEILNYMSPHHK</b>	<b>3 of 5<sup>b</sup></b>

<sup>a</sup> Epitopes that were chosen as suitable for ex vivo tetramer analysis are listed in boldface

<sup>b</sup> Preferred epitopes for ex vivo analysis

**Supplementary Table 2. ELISPOT and Tetramer Frequencies of**

**YFV-Specific T cells**

<b>Subject</b>	<b>HLA type</b>	<b>Epitope</b>	<b>ELISPOT<sup>a</sup></b>	<b>Tetramer<sup>a</sup></b>
#008	DRB1*03:01	Env 43-59	48	18
#008	DRB1*03:01	NS3 355-371	60	23
#036	DRB1*03:01	Env 43-59	68	97
#036	DRB1*03:01	NS1 85-101	60	60
#036	DRB1*03:01	NS3 355-371	120	115

<sup>a</sup>Frequencies are expressed as cells per million.